

DERIVADAS DE LAS FUNCIONES ELEMENTALES

Simple		Compuesta	
Función	Derivada	Función	Derivada
$y = k$	$y' = 0$		
$y = x^n$	$y' = nx^{n-1}$	$y = f(x)^n$	$y' = nf(x)^{n-1} \cdot f'(x)$
$y = \frac{1}{x}$	$y' = \frac{-1}{x^2}$	$y = \frac{1}{f(x)}$	$y' = \frac{-f'(x)}{f(x)^2}$
$y = \sqrt{x}$	$y' = \frac{1}{2\sqrt{x}}$	$y = \sqrt{f(x)}$	$y' = \frac{f'(x)}{2\sqrt{f(x)}}$
$y = \sqrt[n]{x}$	$y' = \frac{1}{n \cdot \sqrt[n]{x^{n-1}}}$	$y = \sqrt[n]{f(x)}$	$y' = \frac{f'(x)}{n \cdot \sqrt[n]{f(x)^{n-1}}}$
$y = e^x$	$y' = e^x$	$y = e^{f(x)}$	$y' = f'(x) \cdot e^{f(x)}$
$y = a^x$	$y' = a^x \cdot \ln a$	$y = a^{f(x)}$	$y' = f'(x) \cdot a^{f(x)} \cdot \ln a$
$y = \ln x$	$y' = \frac{1}{x}$	$y = \ln f(x)$	$y' = \frac{f'(x)}{f(x)}$
$y = \log_a x$	$y' = \frac{1}{x \ln a}$	$y = \log_a f(x)$	$y' = \frac{f'(x)}{f(x) \ln a}$
$y = \operatorname{sen} x$	$y' = \cos x$	$y = \operatorname{sen}(f(x))$	$y' = f'(x) \cdot \cos(f(x))$
$y = \cos x$	$y' = -\operatorname{sen} x$	$y = \cos(f(x))$	$y' = -f'(x) \cdot \operatorname{sen}(f(x))$
$y = \operatorname{tg} x$	$y' = \frac{1}{\cos^2 x} = 1 + \operatorname{tg}^2 x = \sec^2 x$	$y = \operatorname{tg}(f(x))$	$y' = \frac{f'(x)}{\cos^2(f(x))} = f'(x) \cdot (1 + \operatorname{tg}^2(f(x))) = f'(x) \sec^2(f(x))$
$y = \operatorname{cotg} x$	$y' = \frac{-1}{\operatorname{sen}^2 x} = -(1 + \operatorname{cotg}^2 x) = -\operatorname{cosec}^2 x$	$y = \operatorname{cotg}(f(x))$	$y' = \frac{-f'(x)}{\operatorname{sen}^2(f(x))} = -f'(x) (1 + \operatorname{cotg}^2(f(x))) = -f'(x) \operatorname{cosec}^2(f(x))$
$y = \sec x$	$y' = \frac{\operatorname{sen} x}{\cos^2 x}$	$y = \sec(f(x))$	$y' = \frac{\operatorname{sen}(f(x))}{\cos^2(f(x))} f'(x)$
$y = \sec x$	$y' = \frac{\operatorname{sen} x}{\cos^2 x}$	$y = \sec(f(x))$	$y' = \frac{\operatorname{sen}(f(x))}{\cos^2(f(x))} f'(x)$
$y = \operatorname{cosec} x$	$y' = \frac{-\cos x}{\operatorname{sen}^2 x}$	$y = \operatorname{cosec}(f(x))$	$y' = \frac{-\cos(f(x))}{\operatorname{sen}^2(f(x))} f'(x)$
$y = \operatorname{arcsen} x$	$y' = \frac{1}{\sqrt{1-x^2}}$	$y = \operatorname{arcsen}(f(x))$	$y' = \frac{f'(x)}{\sqrt{1-f(x)^2}}$
$y = \arccos x$	$y' = \frac{-1}{\sqrt{1-x^2}}$	$y = \arccos(f(x))$	$y' = \frac{-f'(x)}{\sqrt{1-f(x)^2}}$
$y = \operatorname{arctg} x$	$y' = \frac{1}{1+x^2}$	$y = \operatorname{arctg}(f(x))$	$y' = \frac{f'(x)}{1+f(x)^2}$